Appendix 12
Glossary of Terms

Adaptive Management: A systematic process for continually improving management policies and practices by learning from the outcomes of operational programs. Its most effective form-"active" adaptive management-employs management programs that are designed to experimentally compare selected policies or practices, by implementing management actions explicitly designed to generate information useful for evaluating alternative hypotheses about the system being managed.

Attributes: Any living or nonliving feature or process of the environment that can be measured or estimated and that provide insights into the state of the ecosystem.

Conceptual ecosystem models: Visual representation of ecosystem components and processes and the interactions and feedbacks between them.

Conceptual "stressor" models: Visual representation of known stressors that may cause changes in park resources.

Ecological integrity: A concept that expresses the degree to which the physical, chemical, and biological components (including composition, structure, and process) of an ecosystem and their relationships are present, functioning, and capable of self-renewal. Ecological integrity implies the presence of appropriate species, populations, and communities and the occurrence of ecological processes at appropriate rates and scales as well as the environmental conditions that support these taxa and processes.

Ecosystem: "A spatially explicit unit of the Earth that includes all of the organisms, along with all components of the abiotic environment within its boundaries" (Likens 1992).

Ecosystem attributes ("vital signs"): Component or process of an ecosystem used to determine the long-term "health" of an ecosystem.

Ecosystem components: Part(s) of an ecosystem (e.g., nitrogen, eelgrass, insect, seal, water).

Ecosystem drivers: Major external driving forces such as climate, fire cycles, biological invasions, hydrologic cycles, and natural disturbance events (e.g., earthquakes, droughts, floods) that have large-scale influences on natural systems.

Ecosystem function: All physical and chemical properties of a structure that relate to its form and organization excluding the action or use of the structure which is more critically termed its role (e.g., dispersal mechanism, ecosystem stability).

Ecosystem management: The process of land-use decision making and land-management practice that takes into account the full suite of organisms and processes that characterize and comprise the ecosystem. It is based on the best understanding currently available as to how the ecosystem works. Ecosystem management includes a primary goal to sustain ecosystem structure and function, a recognition that ecosystems are spatially and temporally dynamic, and acceptance of the dictum that ecosystem function depends on ecosystem structure and diversity. The whole-system focus of ecosystem management implies coordinated land-use decisions.

Ecosystem process: A series of ecosystem actions or changes bringing about a result (e.g., decomposition, photosynthesis).

Ecotone: The boundary or transitional zone between adjacent communities or biomes (e.g., riparian zone).

Focal resources: Park resources that, by virtue of their special protection, public appeal, or other management significance, have paramount importance for monitoring regardless of current threats or whether they would be monitored as an indication of ecosystem integrity. Focal resources might include ecological processes such as deposition rates of nitrates and sulfates in certain parks, or they may be a species that is harvested, endemic, alien, or has protected status.

Indicators: A subset of monitoring attributes that are particularly information-rich in the sense that their values are somehow indicative of the quality, health, or integrity of the larger ecological system to which they belong (Noon 2002). Indicators are a selected subset of the physical, chemical, and biological elements and processes of natural systems that are selected to represent the overall health or condition of the system.

Measures: The specific feature(s) used to quantify an indicator, as specified in a sampling protocol.

Stressors: Physical, chemical, or biological perturbations to a system that are either (a) foreign to that system or (b) natural to the system but applied at an excessive (or deficient) level (Barrett et al. 1976:192). Stressors cause significant changes in the ecological components, patterns, and processes in natural systems. Examples include water withdrawal, pesticide use, timber harvesting, traffic emissions, stream acidification, trampling, poaching, land-use change, and air pollution.

Vital Signs: as used by the National Park Service, a subset of physical, chemical, and biological elements and processes of park ecosystems that are selected to represent the overall health or condition of park resources, known or hypothesized effects of stressors, or elements that have important human values. The elements and processes that are monitored are a subset of the total suite of natural resources that park managers are directed to preserve "unimpaired for future generations," including water, air, geological resources, plants and animals, and the various ecological, biological, and physical processes that act on those resources. Vital signs may occur at any level of organization including landscape, community, population, or genetic level, and may be compositional (referring to the variety of elements in the system), structural (referring to the organization or pattern of the system), or functional (referring to ecological processes).